ABSTRACT

A well for producing oil from an underground formation, comprises a vertical section extending from the surface to a depth below the oil-producing formation; a sidetrack or perforated interval (production zone) extending from the vertical section into the oil-producing formation; and a valve, located in the well, and operable to prevent flow of fluid from the vertical section into the production zone and a valve to prevent flow of fluid from the portion below the production zone into the production zone or into the vertical section above the production zone. A method of producing oil from the well comprises allowing oil and water to flow into the well via the production zone until the hydrostatic pressure of the oil and water in the well balances the formation pressure of the oil-producing formation such that further flow into the well ceases; allowing the oil and water in the vertical section of the well to separate under gravity so as to produce (i) a lower layer of water, at least part of which is located in the part of the vertical section below the oil-producing formation, and (ii) an upper layer of oil having its upper surface below the well surface and its lower surface above the production zone; forcing the separated oil and water back down the well and operating the valve such that substantially no fluid is forced into the production zone, an water is forced into the underground formation below the oil-producing formation; and allowing oil and water flow to recommence from the production zone.